DOCUMENT RESUME

ED 305 374 TM 012 866

AUTHOR Sibert, Paula C.
TITLE Relationships among the ACT, PPST, NTE, ACT COMP, and the GPA.
SPONS AGENCY Tennessee Higher Education Commission, Nashville.
PUB DATE Feb 89
NOTE 11p.; Paper presented in part at the Annual Meeting of the Eastern Educational Research Association (Savannah, GA, February 1989).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Beginning Teachers; College Entrance Examinations; *College Graduates; Comparative Analysis; Correlation; *Grade Point Average; Higher Education; *Licensing Examinations (Professions); *Predictor Variables; *Scores; Teacher Education; Teacher Education Programs; *Test Use
IDENTIFIERS American College Testing Program; College Outcome Measures Project; National Teacher Examinations; Pre Professional Skills Tests; Tennessee

ABSTRACT

The relationships among test scores from the American College Testing program test (ACT), the Pre-Professional Skills Test (PPST), the American College Testing College Outcomes Measures Project test (ACT COMP), the National Teacher Examinations (NTE), final grade point average (GPA) in the major field of study, and overall GPA were studied in 615 graduates of teacher education programs in Tennessee. All test scores and GPAs were taken from college records. High correlations were found for five areas. The best predictor of the NTE Communications Skills test was the PPST reading test. High correlations were found between the NTE General Knowledge Test and the ACT composite score, the total score of the ACT COMP, and the PPST math score. Results indicate that the ACT composite score and the PPST reading score were the best predictors of the NTE, ACT COMP, and GPA, with the ACT composite score weighing the most in eight of the regression equations. These results suggest that over-testing of students in the field of teacher education occurs. Three tables summarize study data. (SLD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED305374

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

PAULA C. SIBERT

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

RELATIONSHIPS AMONG THE ACT, PPST, NTE, ACT COMP, AND THE GPA

by
Paula C. Sibert
Center for Teacher Education Evaluation
Tennessee Technological University
Cookeville, TN 38505

TM012866

RELATIONSHIPS AMONG THE ACT, PPST, NTE, ACT COMP, AND THE GPA[1]

by
Paula C. Sibert
Center for Teacher Education Evaluation
Tennessee Technological University
Cookeville, TN 38505

In recent years there has been a concern about the state of the country's education system. National reports have been written on this issue. A Nation at Risk (National Commission on Excellence in Education, 1983) and Boyer (1983) in High School both question the academic qualities of teachers. Going on the assumption that higher academic standards produce better teachers, they call for a raising of the standards in the teacher education programs (Guyton & Farokhi, 1987).

As a result, teacher testing has become an important issue in the attempts being made to improve education in the United States. Legislatures are demanding more accountability and one of the simplest forms is to administer a pencil and paper test. Rudner (1988) reported that as of April 1987, forty-eight states have either implemented or planned to implement some form of teacher testing. Over the past few years, more and more tests have been added into the curriculum for the preparation of teachers.

There has been a current trend in using testing as a criterian for admission to teacher education programs and the teaching profession (Pugach & Raths, 1983). As a criterion for admission to higher

---

[1]Presented in part before the Annual Meeting of the Eastern Educational Research Association, Savannah, Georgia, February, 1989. The work reported herein was supported in part by a grant through the Centers of Excellence Program of the Tennessee Higher Education Commission.

TM012866

education institutions, most individuals complete one of the national standardized tests such as the American College Test (ACT) or the Scholastic Aptitude Test (SAT). In recent years, in an effort to improve the quality of those individuals entering the professional teacher education programs, many states have imposed the use of additional tests. According to Rudner (1988), 25 states have imposed some type of testing program prior to admission to the professional phase of a teacher education program, usually at the beginning of the third year in college. One of the most frequently used tests is the Pre-Professional Skills Tests (PPST). At the time of completion of the teacher education program, many institutions or states require students to complete the National Teacher Examinations (NTE) prior to graduation and/or certification (licensure). Rudner (1988) indicated there were 22 states requiring the NTE for issuance of a teaching certificate or license.

As a part of the accountablity issue, many institutions have begun to require all students, before they receive a degree, to complete some type of comprehensive examination or national standardized test. In Tennessee students at State Board of Regents institutions must complete the College Outcomes Measures Project test administered by the American College Testing Program (ACT COMP). Individuals preparing to be teachers are required to complete more tests than any other group of college students. Testing requires the use of precious resources that could be put to work in other ways. Is it possible to reduce the amount of required testing and obtain the same results; that is, be accountable for the quality of the teachers being prepared in institutions of higher education?

Research has been conducted (Heard & Ayers, 1988; Stoker & Tarrab, 1985; and Jones, 1982); however, the results are inconclusive regarding the value of current testing policies for teachers. Stoker and Tarrab (1985) studied the relationship between the ACT and the PPST. They reported correlations between the two tests to be on the order of 0.68 to 0.75. Similar results were found by Heard and Ayers (1988). These studies found that the ACT is a good predictor of scores on the PPST. In a study comparing the ACT and the NTE, Jones (1982) computed correlations between the ACT Composite score and the NTE component scores. The correlations were found to be significant. It was concluded that the ACT Composite score could be used to predict the NTE scores. These studies raise the question to the need of reducing the amount of testing in teacher education programs.

Purpose

The purpose of this study was to examine the relationships among test scores from the tests listed above and the final grade point average in the major field of study and overall grade point average. A secondary purpose of the study was to develop regression equations to predict success in college (as measured by Grade Point Averages) and scores on outcomes assessment devices (National Teacher Examinations and College Outcomes Measures Project) utilzing entrance criteria (American College Test and Pre-Professional Skills Test scores).

As legislatures continue to explore the issue of effectively preparing teachers, concern should be taken to ensure that the procedures used are effective measures of predicting success as a teacher. The various test instruments must measure different skills and traits instead of providing redundant information. The results of this study can be used to help determine if all of the tests currently being

used are necessary in an effective testing program.

Methodology

An ex post facto research design was used to accomplish this study. Subjects consisted of 615 graduates (512 from Tennessee Technological University and 103 from a small liberal arts college in Tennessee) who had completed the NTE during their senior year. All subjects had completed the NTE between the Fall of 1985 and the Summer of 1988. Students normally complete the ACT prior to admission to the University, the PPST in the last quarter of their sophomore year, and the ACT COMP in one of the last two quarters prior to graduation. All test scores and GPAs were taken from official university records. Means, standard deviations, and correlations between all variables were computed. Regression equations were computed to predict outcome measures based on ACT and PPST scores. Table 1 shows a listing of the variables used in the study.

Results

The means, standard deviations, and correlations of all variables are presented in Table 2. Results of the study indicated that the subjects had achieved near the national means on all of the measures employed. Correlations for all variables were significant beyond the 0.01 level. Correlations of scores from the three sub-tests of the NTE with the other measures under consideration were on the order of 0.35 to 0.80.

High correlations were found in five areas. The best predictor of the NTE Communications Skills test was the PPST Reading test (r=0.76). High correlations were found between the NTE General Knowledge test and three other measures: the ACT Composite score (r=0.80), the Total score of the ACT COMP (r=0.76), and the PPST Math score (r=0.75). These were

Table 1. List of Variable Names Used in Paper

Variable	Meaning
CS	Communication Skills score on NTE
GK	General Knowledge score on NTE
PK	Professional Knowledge score on NTE
MJQPA	Final grade point average in major
QPA	Final overall grade point average
COMPTOT	Total score on ACT COMP
FSI	Functioning within Social Institutions score on ACT COMP
USI	Using Science and Technology score on ACT COMP
UTA	Using the Arts score on ACT COMP
COMM	Communicating score on ACT COMP
SP	Solving Problems score on ACT COMP
CV	Clarifying Values score on ACT COMP
READ	Reading score on PPST
MATH	Mathematics score on PPST
WRITE	Writing score on PPST
ENG	English score on ACT
ACTMA	Mathematics score on ACT
SS	Social Studies score on ACT
SCI	Natural Sciences score on ACT
TOTAL	Composite score on ACT

Table 2. Means, Standard Deviations and Correlations of All Variables[1]

Variable	$\bar{X}$	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. CS	661	9.6	100	76	76	48	54	65	56	55	47	59	53	44	76	55	62	71	52	65	60	73
2. GK	659	11.4		100	71	35	47	76	62	67	56	70	62	52	74	75	55	63	67	72	70	80
3. PK	660	10.1			100	53	57	66	58	56	48	57	58	46	74	54	51	61	48	63	55	67
4. MJQPA	3.49	0.36				100	79	41	38	35	25	34	33	30	37	35	27	43	34	32	33	43
5. QPA	3.09	0.44					100	43	37	37	30	38	35	28	47	38	43	54	42	41	40	53
6. COMPTOT	186	15.9						100	80	86	78	83	82	79	70	57	49	61	51	72	61	74
7. FSI	62	6.0							100	54	42	68	61	64	66	51	45	53	47	62	52	64
8. USI	63	6.3								100	51	70	71	68	63	50	41	51	45	62	57	65
9. UTA	61	6.5									100	63	67	60	40	36	34	44	32	51	41	51
10. COMM	51	7.4										100	50	47	59	59	37	53	50	61	58	67
11. SP	77	5.9											100	52	56	36	44	49	36	62	48	58
12. CV	57	6.4												100	55	39	40	46	36	55	44	55
13. READ	177	5.2													100	57	57	66	46	66	61	74
14. MATH	178	5.9														100	40	39	70	42	59	66
15. WRITE	176	3.2															100	64	41	47	44	59
16. ENG	20	4.9																100	55	58	59	80
17. ACTMA	17	6.9																	100	48	58	81
18. SS	18	6.6																		100	68	83
19. SCI	21	5.6																			100	86
20. TOTAL	19	5.0																				100

[1]Decimal omitted. All correlations $p < .01$.

all significant beyond the .0001 level.

The results of the Stepwise Regression analysis are shown in Table 3. Variables used in the equations were significant beyond the .05 level. Both the Composite score of the ACT and the Reading score of the PPST were significant predictors in eight of the ten equations.

The ACT Composite score accounted for 59% of the variance of the prediction of the NTE Communication Skills test. The addition of the PPST Reading score and the ACT English score accounted for an additional 11% of the variance. In the prediction of the NTE General Knowledge score 69% of the variance was accounted for with the ACT Composite score. By adding the PPST Math and Reading scores an additional 8% of the variance was accounted for. By using the PPST Reading score and the ACT Composite score almost 60% of the variance was accounted for in the prediction of the NTE Professional Knowledge test. In predicting the Overall Grade Point Average the PPST Math and ACT English scores were the best predictors, but only accounted for 27% of the variance. Almost 68% of the variance for the ACT COMP Total score was accounted for by the PPST Reading score and the ACT Science and Composite scores.

Conclusions

The evidence from this study showed that the ACT Composite score and the PPST Reading score were the best predictors of the NTE, ACT COMP, and the QPA with the ACT Composite score weighing the most in eight of the regression equations. The results neither support nor refute the use of the number of the tests that are currently being used in teacher education programs. They do, however, support the question raised by researchers as to the possibility of overtesting students in the field of teacher education.

Table 3. Regression Equations

Prediction of Scores on NTE Subtest

CS = 525 + 0.65(READ) + 0.61(ENG) + 0.46(TOTAL)	R^2 = 0.70
GK = 451 +.045(READ) + 0.61(MATH) + 1.11(TOTAL)	R^2 = 0.77
PK = 494 + 0.84(READ) - 0.39(SCI) + 1.31(TOTAL)	R^2 = 0.60

Prediction of QPA

QPA = -0.38 + 0.0155(MATH) + 0.0371(ENG)	R^2 = 0.27

Prediction of Scores on ACT COMP Subtests

COMPTOT = -7.12 + 0.90(READ) - 0.68(SCI) + 2.50(TOTAL)	R^2 = 0.68
FSI = -22 + 0.42(READ) - 0.28(SCI) + 0.85(TOTAL)	R^2 = 0.54
USI = -7 + 0.32(READ) + 0.64(TOTAL)	R^2 = 0.54
UTA = 51 + 0.54(TOTAL)	R^2 = 0.21
COMM = -61 + 0.30(READ) + 0.26(MATH) + 0.65(TOTAL)	R^2 = 0.52
SP = 64 + 0.27(ENG) + 0.43(SS)	R^2 = 0.45
CV = -5 + 0.30(READ) + 0.42(SCI) + 0.92(TOTAL)	R^2 = 0.48

revised 2/14/89

References

Guyton, E. & Farokhi, E. (1987). Relationship among academic performance, basic skills, subject matter knowledge, and teaching skills of teacher education graduates. Journal of Teacher Education, 38(5), 37-42.

Heard, S.A. & Ayers, J.B. (1988). Validity of the American College Test in predicting success on the Pre-Professional Skills Test. Educational and Psychological Measurement, 48 197-200.

Jones, J.W. (1982). The relationship between prospective teachers' scores on the American College Test and their National Teacher Examinations scores in selected groups of participants. (Doctoral dissertation, East Texas State University, 1982). Dissertation Abstracts International, 43, 1369-A - 1370-A.

Pugach, M.C. & Raths, J.D. (1983). Testing teachers: analysis and recommendations. Journal of Teacher Education, 34(1), 37-43.

Rudner, L.M. (1988). Teacher testing--an update. Educational Measurement: Issues and Practice. 7(1), 16-19.

Stoker, W.M. & Tarrab, M. (1985). The relationship between the Pre-Professional Skills Tests and the American College Tests. Teacher Education and Practice, 2(1), 43-45.